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TITLE: COMPOSITE MATERIAL FOR DENTAL USE

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ABSTRACT:

PURPOSE: To obtain a composite dental material composed of a composite material produced by dispersing colloidal silica having a specific particle diameter in a monofunctional (meth)acrylate and imparted with rigidity and abrasion resistance without deteriorating the excellent transparency, surface gloss and moldability of the base resin.

CONSTITUTION: This composite material for dental use is produced by carrying out the hydrolysis and polycondensation of at least one kind of silane compound of the formula $(R<SP>1</SP> \text{ and } R<SP>2</SP> \text{ each is ether bond or a 1-10C hydrocarbon residue; } R<SP>3</SP> \text{ is H, ether bond or a 1-10C hydrocarbon residue; (a) and (b) each is 0-3; (c) is 4-a-b and is 1-4})$ in the presence of a colloidal silica having an average particle diameter of 1-100nm, dispersing 1-300 pts.wt. of the produced silica-based polycondensate in 100 pts.wt. of a monofunctional (meth)acrylate adding a polymerization initiator to the dispersion and polymerizing the obtained composition. The produced material may further be incorporated with 1-400 pts.wt. of a (meth)acrylate (co)polymer. The material is especially useful e.g. as a resin for denture base, artificial tooth, etc.

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